

19. An isolated nucleic acid molecule comprising 30 contiguous nucleotides of SEQ ID NO:1 and further comprising an alteration, wherein said alteration is selected from the group consisting of T at position 89837, G at position 154202, A at position 154431, and G at position 160052.
20. An isolated nucleic acid molecule comprising SEQ ID NO:1 and further comprising an alteration, wherein said alteration is selected from the group consisting of T at position 89837, G at position 154202, A at position 154431, and G at position 160052.
21. The isolated nucleic acid molecule of claim 20, wherein the nucleic acid molecule comprises positions 89803-89988 of SEQ ID NO:1 and said alteration is T at position 89837.
22. The isolated nucleic acid molecule of claim 20, wherein the nucleic acid molecule comprises positions 153994-154500 of SEQ ID NO:1 and said alteration is G at position 154202.
23. The isolated nucleic acid molecule of claim 20, wherein the nucleic acid molecule comprises positions 153994-154500 of SEQ ID NO:1 and said alteration is A at position 154431.
24. The isolated nucleic acid molecule of claim 20, wherein the nucleic acid molecule comprises positions 159915-160827 of SEQ ID NO:1 and said alteration is G at position 160052.
25. The isolated nucleic acid molecule of claim 20, wherein said alteration comprises T at position 89837, G at position 154202, A at position 154431, and G at position 160052.
26. A nucleic acid probe which hybridizes under high stringency conditions to the isolated nucleic acid molecule of claim 20 but does not hybridize to a nucleic acid molecule having the sequence of SEQ ID NO:1.
27. The nucleic acid probe of claim 26, wherein the probe is selected from the group consisting of
- a) a probe that hybridizes under high stringency conditions to a polynucleotide comprising SEQ ID NO:1 having T at position 89837 but not to a polynucleotide comprising SEQ ID NO:1 having C at position 89837;

- b) a probe that hybridizes under high stringency conditions to a polynucleotide comprising SEQ ID NO:1 having G at position 154202 but not to a polynucleotide comprising SEQ ID NO:1 having A at position 154202;
- c) a probe that hybridizes under high stringency conditions to a polynucleotide comprising SEQ ID NO:1 having A at position 154431 but not to a polynucleotide comprising SEQ ID NO:1 having G at position 154431; and
- d) a probe that hybridizes under high stringency conditions to a polynucleotide comprising SEQ ID NO:1 having G at position 160052 but not to a polynucleotide comprising SEQ ID NO:1 having A at position 160052.
28. The probe of claim 27, wherein the probe hybridizes under high stringency conditions to a polynucleotide comprising SEQ ID NO:1 having T at position 89837 but not to a polynucleotide comprising SEQ ID NO:1 having C at position 89837.
29. The probe of claim 27, wherein the probe hybridizes under high stringency conditions to a polynucleotide comprising SEQ ID NO:1 having G at position 154202 but not to a polynucleotide comprising SEQ ID NO:1 having A at position 154202.
30. The probe of claim 27, wherein the probe hybridizes under high stringency conditions to a polynucleotide comprising SEQ ID NO:1 having A at position 154431 but not to a polynucleotide comprising SEQ ID NO:1 having G at position 154431.
31. The probe of claim 27, wherein the probe hybridizes under high stringency conditions to a polynucleotide comprising SEQ ID NO:1 having G at position 160052 but not to a polynucleotide comprising SEQ ID NO:1 having A at position 160052.
32. The probe of claim 27, wherein the probe is detectably labeled.
33. A method for diagnosing a mutation in a breast cancer patient comprising hybridizing a probe of claim 27 to a patient's sample of DNA or RNA, the presence of a hybridization signal being indicative of breast cancer.
34. A method according to claim 33 wherein the patient is European decent.

Al 35. A method according to claim 34 wherein the patient's DNA or RNA has been amplified and said amplified DNA or RNA is hybridized with a probe of claim 27.

36. A method according to claim 34 wherein said hybridization is performed in situ.

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